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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,275	05/16/2002	Masahiro Serizawa	G0126.0213	3300

32172 7590 04/12/2011  
DICKSTEIN SHAPIRO LLP  
1633 Broadway  
NEW YORK, NY 10019

EXAMINER
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HE, JIALONG

ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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04/12/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/980,275	<b>Applicant(s)</b> SERIZAWA ET AL.	
	<b>Examiner</b> JIALONG HE	<b>Art Unit</b> 2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44,46-67 and 69-88 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,16,22,28,34,51,57,74,79 and 84 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 2-15,17-21,23-27,29-33,35-50,52-56,58-67,69-73,75-78,80-83 and 85-88.

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Response to Amendments and Arguments*

2. Applicant amended independent claims 1, 34 and 57 by adding a new limitation  
“by smoothing said feature parameter for spectral envelope characteristics of said current frame **using a smoothed feature parameter for spectral envelope characteristics of an immediately preceding frame**”

The applicant does not pointed out where the original disclosure supports the amended claims. It appears the most relevant sections are in **page 13** (smoothing spectral envelope) and in **page 24** (using smoothing RMS features before current frame). Nowhere in the specification discloses “using a smoothed feature parameter for spectral envelope characteristics of **an immediately preceding frame**”. By carefully reading through specification, the Examiner could not find fully support for the amended claims. See following rejection under 35 U.S.C. 112 1<sup>st</sup> paragraph.

3. Applicant amended fig. 8-10 by adding the legend “Prior Art”. The objection to fig. 8-10 due to lacking of proper label is withdrawn. However, after carefully reading the specification (**pages 3-4**), the Examiner noticed that the text in boxes #12 and #14 of fig. 8 has term “**decoding circuit**” while specification states block #12 and #14 of fig. 8

are “**coding circuit**”. In other words, text in boxes #12 and #14 are inconsistent with specification. See objection to fig. 8.

4. Regarding rejection to claims 34, 51, 79, 57 and 84, applicant amended claims. Rejection under 35 U.S.C. 101 is withdrawn.

5. Regarding rejection under 35 U.S.C. 103(a), applicant argues (Remarks, pages 23-24) Hayata in view of Saikaly and further in view of AAPA fails to disclose the newly added limitation in independent claims.

Applicant first argues (**Remarks page 23**) that “*Hayata does not teach or suggest using a smoothed feature parameter for spectral envelope characteristics of an immediately preceding frame to smooth a feature parameter for spectral envelope characteristics of a current frame as recited in the independent claims*” and “*Saikaly does not teach or suggest smoothing in a voice-less period separated from a voice period as required by the independent claims.*”

Applicant further argues (**Remarks, page 24**) “*The Background section of the present specification merely teaches direct use of previously transmitted feature parameter for spectral envelope characteristics in a current frame when the feature parameters are not received in the current frame. Unlike the claimed invention, the AAPA discloses nothing about smoothing the feature parameter for the spectral*

Art Unit: 2626

*envelope characteristics. Though the AAPA does disclose smoothing the RMS of a previous frame, it does not teach or suggest use of the past transmitted feature parameter for spectral envelope characteristics. The RMS is not similar to the spectral envelope characteristics.”*

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Examiner note that Hayata discloses generating smoothed filter coefficients for pause period (i.e., voice-less) (**Hayata, Summary of invention, Note filter coefficients representing signal spectral envelope**). Saikaly discloses updating current frame LPC coefficients and energy with an average (i.e., smoothed) of immediately previous frames (**Saikaly, Summary of the invention**). AAPA discloses replacing RMS (energy) of current frame with smoothed RMS of previous frames (**Spec. Background Art, page 6**). AAPA also discloses “the decoding device smoothes the feature parameters discontinuously received, and decodes a speech signal by using the smoothed parameters (**Spec. Background Art, page 1**). The Examiner believes the combined teaching of Hayata, Saikaly and AAPA discloses the newly added feature.

***Examiner's Note***

6. As a general comment, Examiner notes that the specification of instant application described existing problems in the conventional decoding system in the background section (**Spec. page 8, fig. 8-10**). The specification also described some possible solutions to the existing problems of the conventional decoding system (**Spec. pages 16-17**). By comparing fig. 1 (an embodiment that claim 1 directed to) with fig. 10 (a prior art system). The only difference is that fig. 1 has smoothing circuit #64 (**Spec. page 18, smoothing circuit 64 is the difference between the device according to the invention and the conventional device**). Specification contains some details about when and how smoothing is done. Simply claiming "using a smoothed feature parameter for spectral envelope characteristics" fails to distinguish with prior art. It is suggested to clarify the claimed invention by including some details to distinguish the claimed invention with the prior art in record.

***Drawings***

7. The disclosure is objected to because of the following informalities:

Figure 8, #12 and #14 has text "**DECODEING CIRCUIT**". The specification describes Fig. 8 as encoder and #12 and #14 as "**coding circuit**". See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not

Art Unit: 2626

to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

8. Claims 1, 34 and 57 are objected to because of the following informalities:

Claims 1, 34, 57, each recite **"feature parameters for a gain and for spectral envelope characteristics"**, **"parameters for spectral envelope characteristics"**, and **"parameter for a gain"**. These expressions are not idiomatic English because of using term "for ..." to indicate parameter type. The Examiner understands that applicant is trying to express "gain parameter", "spectral envelope parameters".

Claims 1, 34, 57, each recite **"voice-less"** period. This term is confusing because in speech analysis area, the term "voice-less" normally refers to "unvoiced" sound such as /p/, /k/, /t/, etc. Based on the disclosure (Spec. page 1), "voice-less" in the claims means a period with no voice (i.e., silence period).

It is suggested to clarify the claimed invention by specifying the meaning of the term "voice-less" in the claim. Dependent claims also have similar problems as independent claims.



Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1, 16, 22, 28, 34, 51, 57, 74, 79, and 84 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant amended independent claims 1, 34 and 57 by adding a new limitation.

“by smoothing said feature parameter for spectral envelope characteristics of said current frame using a smoothed feature parameter for spectral envelope characteristics of **an immediately preceding frame**”

MPEP (2163.06) states applicant should specifically point out the support for any amendments made to the disclosure. The applicant has not pointed out where the amended claims are supported. By carefully reading through specification, the Examiner could not find fully support for the newly added limitation. It appears the most relevant

Art Unit: 2626

sections is in **page 13** (about smoothing spectral envelope) and in **page 24** (about using smoothing RMS features before current frame). Nowhere in the specification discloses "using a smoothed feature parameter for spectral envelope characteristics of an immediately preceding frame". The Examiner interprets the newly added limitation based on the disclosure: "using a smoothed spectral envelope feature parameters".

Dependent claims are rejected because they include all features recited in corresponding independent claims.

### ***Claim Rejections - 35 USC § 103***

11. **Claims 1, 22, 28, 34, 51, 57, 74, 79, and 84** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayata (EP 0751490A2) in view of Saikaly et al (U.S. Patent: 5,893,056) and further in view of Applicant's Admitted Prior Art (Spec, pages 1-8, in the section of Background Art, hereinafter referred to as AAPA).

With respect to **Claim 1**, Hayata discloses:

A voice/voice-less detecting circuit for detecting if said speech signals are classified as a voice period or a voice-less period (determination unit for discerning between speech and non-speech states, Col. 4, Line 54- Col. 5, Line 20); and

A voice-less decoding circuit for intermittently receiving said feature parameter for spectral envelope characteristics (discontinuous transmission, Col. 1, Lines 5-10) to decode a current frame of the speech signals in said voice-less period (non-voice decoder, Col. 4, Line 54-

Art Unit: 2626

Col. 5, Line 20), the voice-less decoding circuit performing said decoding by smoothing said feature parameter for spectral envelope characteristics (Col. 5, Lines 21-54; and Col. 8, Lines 21-55), and synthesizing said speech signals of said current frame based on said smoothed feature parameter for spectral envelope characteristics (synthesizing a smoothed background noise portion, Col. 7, Lines 39-58).

Although Hayata teaches a similar non-voice decoder to the claimed invention that utilizes smoothing, Hayata does not explicitly teach smoothing over a plurality of preceding frames or the common use of gain in generating a speech output. Saikaly, however, recites that in the absence of speech or a non-speech period smoothing is performing by averaging over a number of previous frames (Col. 3, Lines 44-58; and Col. 4, Lines 42-56) and notes gain factors common to speech signal coding/reconstruction (Col. 1, Lines 30-32).

Hayata and Saikaly are from a similar field of endeavor in non-speech signal processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Hayata with the averaging of previous frames taught by Saikaly in order to provide more natural and continuous sounding background noise (Saikaly, Col. 3, Lines 1-4).

Hayata and Saikaly does not explicitly disclose but AAPA disclose when no feature parameter for spectral envelope characteristics is received in said current frame, the smoothing is performed using said feature parameter for spectral envelope characteristics received before the current frame (**Spec. Background art, page 3, “When the feature parameters are not transmitted, the output speech signal is decoded by repeatedly using the past transmitted feature parameters”**; page 6, **“when no encoded signal is transmitted, the RMS of the**

previous frame is used in the equation 1". Equation 1 represents smoothing for coding parameters). In addition, Hayata discloses generating smoothed filter coefficients (Hayata, Summary of invention, Note filter coefficients are representing signal spectral envelope). Saikaly discloses current frame LPC coefficients and energy with an average (i.e., smoothed) of immediately previous frames (Saikaly, Summary of the invention). AAPA discloses replacing RMS (energy) of current frame with smoothed RMS of previous frames (Spec. Background Art, page 6). AAPA also discloses "the decoding device smoothes the feature parameters discontinuously received, and decodes a speech signal by using the smoothed parameters (Spec. Background Art, page 1).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Hayata and Saikaly teaching with AAPA teaching to uses parameters from previous frame if no parameters are received for current frame and using a smoothed spectral envelope features. One having ordinary skill in the art would have been motivated to make such a modification so that transmission error could be concealed and sound quality could be improved.

With respect to **Claim 22**, Hayata discloses a representation of a spectrum envelope (Col. 5, Lines 21-37), while Saikaly discloses the gain parameter as applied to claim 1.

With respect to **Claim 28**, Hayata further discloses:

Speech decoding device being included in a speech coding/decoding device with a coding device which determines whether the input signal is in a voice period or in a voice-less period for each frame and encodes the feature parameters of the input signals to output (decoder included in a speech encoding/decoding communication system, wherein an encoder detects speech//non-speech and encodes an input speech signal, Col. 1, Lines 5-49).

Apparatus claim 1 and method **Claim 34** are related as apparatus and the method of using same, with each claimed element's function corresponding to the claimed method step. Accordingly claim 34 is similarly rejected under the same rationale as applied above with respect to apparatus claim 1.

**Claim 51** contains subject matter similar in scope to Claim 22, and thus, is rejected under similar rationale.

**Claim 57** contains subject matter similar in scope to Claim 34, and thus, is rejected under similar rationale. Also, Saikaly discloses speech processing implementation as a program stored on a computer readable medium and executed by a computer processor (Col. 3, Lines 33-43).

With respect to **Claims 74, 79, and 84**, Hayata further discloses:

Smoothing in a subsequent period is performed even when a new feature parameter is not received (smoothing over time as voice inactivity continues, Col. 7, Line 59- Col. 8, Line 4; and Col. 9, Lines 25-35).

12. **Claims 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayata in view of Saikaly et al (U.S. Patent: 5,893,056) and AAPA, and further in view of Jarvinen et al (U.S. Patent: 5,960,389).

With respect to **Claims 16**, Hayata in view of Saikaly and AAPA discloses the background noise decoder as applied to Claim 1. Hayata in view of Saikaly and AAPA does not specifically suggest that when a length of a voice period immediately before a first voice-less period is shorter than a predetermined length, a value of a feature parameter which is finally transmitted in a second voice-less period immediately before the voice period is used as an initial value of smoothing. Jarvinen, however recites utilizing a previous noise parameter for smoothing upon the occurrence of a short speech burst (Col. 21, Lines 16-35; Col. 15, Lines 19-46; and Col. 2, Lines 28-43).

Hayata, Saikaly, and Jarvinen are from a similar field of endeavor in non-speech signal processing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Hayata in view of Saikaly with the concept of addressing a short speech burst taught by Jarvinen in order to prevent a speech burst from being misinterpreted as a background noise spike (Jarvinen, Col. 14, Line 60- Col. 15, Line 3).

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2626

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JIALONG HE whose telephone number is (571) 270-5359. The examiner can normally be reached on Monday-Thursday, 7:00 - 4:30, Alt Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wozniak can be reached on (571) 272-7632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 2626  
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Application/Control Number: 09/980,275  
Art Unit: 2626

Page 14